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COMPLETE AVULSION OF ARM AND SCAPULA—RECOVERY.*

By GREGORY A. WALL, M. D., Captain, M. R. C.
Tulsa, Oklahoma
(Now at Camp McArthur)

A brief review of the anatomy, both applied and descriptive, of the shoulder joint may not be amiss, and will perhaps aid to comprehend more fully the gravity of this injury. The upper extremities are joined to the trunk by the shoulder-girdle, which is composed of the clavicle and scapula: the scapula is the more important bone and is found on all mammals; the clavicle only serves to hold the shoulder posteriorly and away from the chest. The upper extermity being an organ of prehension and not one of support, the shoulder joint which connects it with the trunk by the shoulder-girdle is constructed with the idea in view of favoring and permitting motion, and not of supporting weight, or resisting force; hence, it is a ball and socket joint which allows of the freest movement. The joint and the shoulder-girdle are attached to the body by muscles and ligaments in abundance. This joint, like all other joints of similar character, has a capsular ligament which serves to keep the synovial fluid applied to the articulating surfaces. This ligament, however, has not much strength per se, being rather lax, and when the muscles are removed, the head of the humerus can be drawn a considerable distance away from the glenoid cavity. The two principal ligaments of the joint are the coracohumeral and the glenohumeral, but these do not possess very great strength. The coracohumeral ligament passes from the coracoid process to the anterior portion of the greater tuberosity of the humerus. The glenohumeral is a ribbon like band lying alongside the inner edge of the biceps tendon, passing from the root of the coracoid process to the lesser tuberosity of the humerus.

There are two sets of muscles; one set connects the shoulder-girdle to the trunk; the other the arm to the shoulder-girdle. The arm is connected to the shoulder-girdle by nine muscles, viz: supra and infraspinatus, teres major and minor, subscapularis, pectoralis major, lattissimus dorsi, deltoid and coracobrachialis, all of which insert into the humerus and are relatively large and powerful muscles. In avulsion of the arm, all these muscles with their accompanying nerve and blood-supply are torn. The scapula has seventeen muscles attaching it to the trunk and arm. The ones above enumerated with the following eight additional, viz: trapezius, omo-hyoid, serratus anterior, levator anguli scapula, rhomboideus major and minor, triceps and biceps. In avulsion of the humerus and scapula, the following muscles are not torn, but are pulled off in their entirety, viz: The subscapularis, supra and infraspinatus and triceps.

From this one can readily realize the amount of shock there must necessarily

*Read in Surgical Section, Tulsa, May 15, 1918.

be, following an avulsion of the arm alone, but when the scapula is added to the injury we appreciate the fact that the additional trauma is certainly cause for a still greater shock. The injury is caused almost always by the arm being caught in revolving machinery, such as belts or cogwheels, and until a comparatively recent period the avulsion of an arm was supposed to be always fatal. Since shock or hemorrhage are the only two causes of immediate death, we should by conservative methods and modern treatment save practically all our cases.

The muscle-bellies are more frequently torn through than are the tendinous extremities. The nerves are frequently ruptured at a distance from the wound, so that either the stumps are deeply buried in the sound structures above, or are torn within the avulsed limb and hang exposed for several inches from the trunk. The hemorrhage is usually very slight, owing to the torsion of the vessels, and for this reason patients seldom bleed to death. In cases of avulsion of the arm, the torn ends of the brachial artery and branches of the brachial plexus may be seen hanging in the wound. The chief cause of death is shock, but with our present knowledge of this condition and its modern treatment, it would seem to the essayist that death from this cause should be infrequent.

The treatment of this injury is both conservative and radical. In the first few hours, or days, we must confine our treatment to conservative measures. We must take appropriate means to combat the shock and stop the hemorrhage. In this connection it might be well to bear in mind that the hemorrhage in these cases will almost invariably kill before aid arrives, or it will not kill at all. When we consider the size of the axilliary artery, we are aware that unless this artery is closed off by torsion the subject will die in a very few minutes. The first attention, then, in these cases is to control hemorrhage and combat the shock, and to prevent as far as is possible any further contamination of the wound, by dressing it at once with some nonirritating solution, such as Wright's hypertonic solution of salt, which seems to us to meet the exigencies of the case. The principle of this method is to make use of the bactericidal power of the fresh blood serum, which is encouraged to flow from the wound surfaces by the application to them of a more concentrated saline solution than blood serum. While we realize fully that this method is more properly used in wounds already infected, we can see no valid objection to its early use to prevent the entrance of bacteria into the deeper tissues through the lymph channels, because, it inhibits coagulation and so prevents the sealing up of the lymph channels through which lymph pours into the wound. "It appears", says Moynihan, "to definitely inhibit bacterial activity and propagation".

After the shock is relieved, then the radical treatment should begin as soon as possible. Place the patient under a general anesthetic and do as complete a primary closure as is possible without drainage, providing we are convinced that the wound is "clinically sterile", which means that condition in which the organisms are so few that the wound can be safely closed. If the streptococcus is present, even in small number, we should hesitate to do this closure.* "We know that from the wound surface the circulation has been cut off and gangrene and sloughing make haste to develop. During the first four to six or even eight hours, few organisms, or none, can be recovered from the wound, either by smear or cultural methods. The organisms are there nevertheless, and given the prodigal fertility of the soil in which they are sown, will quickly show evidences of their growth. In this brief period the wound is said to be 'contaminated'; in all later periods 'infected'.

Against this attack made upon it, how does the body protect itself? The chief defense is the blood serum and leucocytes. The capacity of these two, if they only have an adequate chance, may be said to be almost illimitable against all organisms except the streptococcus. The serum possesses strong bactericidal pow-

*Moynihan, War Addresses, 1917.

ers of its own; the phagocyte can devour bacteria greedily: but in exerting their powers both serum and white cells are apt to undergo degradation. The leucocyte breaks down and its powers of tryptic digestion is then exerted upon the fluids around it; peptones are produced in quantities which make easy the growth in them of all forms of bacteria. Moreover. the surface of the wound becomes 'lymphbound,' a condition in which a mesh of fibrin entangles the blood cells and a sort of matting of coagulated lymph spreads all over the surface. No fresh serum can then reach the wound, nor are fresh leucocytes available for the attack. The infective process can then proceed apace, without hindrance of the natural defenses, which are broken down".

It is now generally conceded that the most urgent need in wounds of this character, as taught us by the present war, is to secure their fullest closure at the earliest possible minute, viz: during the peroid of contamination and before infection. In this procedure the same preoperative preparation of the skin and adjacent parts, as is done in any operative measure, is required. The operation resolves itself, as well said by Binnie, into a "trimming one", having for its object the removal of all the damaged tissues, very completely. Protruding ends of bone, tendons and nerves should be excised very thoroughly, especial attention being given to nerve endings, so that they may not cause a tender and painful cicatrix. The loose skin tags about the wound should be removed if they show imperfect restorative powers. The surfaces remaining after this trimming operation should bleed everywhere, says Moynihan. Perfect hemostastis is then secured. Close the wound as completely as possible without drainage, by suturing together the muscle remants, decreasing as much as possible the size of the wound, and finally, the skin is closed over as completely as it will permit. In closing the muscles No. 1 chromic gut should be used: for the skin, plain catgut is the best, reinforced by retension sutures of silkworm gut; to relieve the tension on the skin edges it should be used in addition to the plain catgut. Later on, the remaining uncovered space should be skin grafted by the Thiersch method or treated by the adhesive plaster method of Beck, which has served me well in the few cases in which I have used it.

In war wounds this method of early closure is meeting with remarkable success. If the operation is carried out with exactitude and something near technical perfection, in small contaminated wounds probably not less than eighty per cent. will heal by first intention, according to Moynihan. The failures occur where a piecemeal removal of the infected tissues has been carried out, permitting a reinfection of the newly-made surfaces. One must be cocksure of his ground in using this technic, for every one realizes the serious, not to say disastrous, results which come from the injudicious closure of septic wounds, and because of this there is always a certain fear of the premature closure of this kind of wound. But, recent war surgery has shown us that a mechanical cleansing of the most thoroughgoing kind carried out ruthlessly and rapidly will allow the majority of cases to be closed with an excellent chance of primary union. Along this line, *Moynihan, speaking of the Carrel-Dakin method, says; "There can be no doubt that many of the cases which have proven so successful under this method * * * * would have done equally well and far more rapidly under the method of immediate closure. To put this statement in what may seem an extreme fashion, it may be said that its greatest triumphs have been in cases where it need not, in fact, have been applied. More than ever we are now confirmed in our strong opinion, that it is primary mechanical cleansing, after a thorough exposure and with every precaution and care that is the supreme necessity in these cases; and that this alone, if complete, will often allow the natural defense of the body to secure the blameless healing of the wound".

The following case presented itself to me, and was treated along these lines: November 26, 1917. J. A. H. strong healthy young man while driving a

*Loc. Cit.

pulling machine, got his arm caught in the revolving machinery. Left arm and scapula were completely torn from the body. The clavicle was not torn away, but the acromial end was left exposed for about one inch. At the time there was little or no hemorrhage. A physician was called who rendered first aid, and the patient was brought to the hospital in an ambulance from a distance of twelve miles. Upon arrival at the hospital, patient was in severe shock. He was put to bed and measures taken to combat the shock, such as morphin pituitrin, salt solution by enteroclysis, and bandaging the extremities, etc. Examination of the wound showed that it was one thirty-five centimeters long by twenty-five c.c. wide or fourteen by ten inches in dimension. It was a ragged looking wound with muscles and nerve endings hanging exposed. There was no bleeding. The wound was dressed with hypertonic saline solution and 5,000 units of antitoxin (tetanus) were administered. Patient reacted from the shock very fully within the succeding twenty-four hours.

November 27, 1917. Patient was given ether and wound was thoroughly trimmed up and all loose and suspicious tissues was excised. The nerves and vessels which were hanging exposed in the wound were excised, and the exposed end of the clavicle was cut away with bone forceps. The lacerated ends of the muscles were then sewed together with No. 1 chromic gut, by a continuous over-and-over suturing, until the wound was reduced in size from its former dimensions to one of only fifteen by seventeen c.c. in dimensions (six by seven inches). The skin edges were pulled as closely as possibly together, by a catgut No. 1, plain, reinforced by silkworm gut retention sutures. A stab wound was made in the skin over the location of the inferior scapular angle, and a small rubber drain was put in the space left by the avulsion of the rhomoidii muscles and scapula. The wound was dressed with plain gauze with adhesive retention strips.

The following day temperature rose to 103, pulse 120, and he was delirious; this subsided within the next twenty-four hours and from that time on the patient had no further trouble. There was some slight suppuration from the exposed surface of the wound, and from the drainage site, but it was negligible.

The wound was dressed daily with a ten per cent. iodoform gauze dressing saturated with a sterilized mixture of one oz. of balsam of Peru and fifteen oz. of oleum ricini. This has given the essayist good results on many occasions, limiting suppuration and hastening healthy granulation in a marked way. It has been especially beneficial in wounds where the suppuration was due to erythistic granulations. It is bland, soothing and nonirritating, and is easy to remove from the wound surface.

December 10th, 1917. Sixteen days after the accident patient was again given a general anesthetic and Thiersch skin grafting was done. The grafts practically all took and the wound was healed with the exception of a small area over the end of the clavicle, about as large as a silver dollar. This was due to the fact that we failed to remove enough of the clavicle end at operation; however, it finally healed over completely. Two months and three days after the injury the patient went home with the wound healed fully over.

Conclusions. Avulsion of the shoulder, no matter how great, unless immediate hemorrhage kills, should, under modern methods of treatment, be saved and fatalities be the exception instead of the rule. As soon as possible following the control of the shock, the wound should be trimmed up thoroughly and early primary closure should be done, with especial attention to the latest approved methods of surgical technic, taking all the preoperative precautions we would take in any surgical procedure. We should call to our aid the bacteriologist so that we may eliminate the streptococcus, before complete closure without drainage is done. In other words, we should have, at least, "clinical sterilization" since "absolute sterilization" of a wound up to now has not been possible.

Discussion.

Dr. Ross Grosshart, Tulsa: I have heard Dr. Wall's paper and enjoyed it very much. Of my own experience I cannot speak, for I never had an experience of that kind. We have learned by experience and teaching that in all traumas resulting from wounds, the first treatment to be given by the physician is to look after the general condition as to internal shock. The other treatment is as the Doctor said here; there having been great strides made during the war which made a necessity of treating lacerated wounds. The latest teachings of surgery from the trenches are that when they get these lacerated wounds and where the patient is experiencing considerable shock, they control the hemorrhage by burning the wound by the use of some antiseptic; combating the shock by giving the patient some morphine, and giving tetanus antitoxin, which has a tendency to prevent tetanus and when the tetanus antitoxin has been given these patients they are to be let alone until they get well. Those who are let alone and do not die from the immediate effects of trauma, that get to the first aid positions, are then given antiseptic attention which the doctor has outlined to you very plainly. It resolves itself down to combating the shock and keeping your patient from dying from tetanus, the rest is easy.

Dr. A. A. Will, Oklahoma City: This has been a very interesting paper. The injuries we do not see, I suppose are very common in the trenches. I think Dr. Wall brought out as near the ideal treatment of these wounds as possible. It has been only a few years ago that these patients were operated on, adding shock to shock. The next thing, as Dr. Wall said, is not to disturb these wounds with antiseptics. Let nature use her own anteseptic. He also used the best solution, so it seems to me from what I have read of these treatments, that Dr. Wall gives the patient the most ideal treatment of today.

Dr. Wall, closing: I wish to thank Dr. Will and Dr. Grosshart for the kindly words they said. The more I practise and the more I study the more I feel that we depend too much on what the other fellow has done and not what we ought to do ourselves. These cases only die from one of two things, the shock or hemorrhage. If they die from hemorrhage, the doctor is no use whatever. In regard to the wound I cited, it was a monstrous wound. All the vessels were hanging down. I clipped them off the next day. I put him to bed and gave him morphine. I got all the blood I could to the brain. I kept him quiet. Just as soon as the shock subsided I gave him the treatment which cannot be beaten. I have a case in the hospital today. I had to remove the hand at the metacarpal joint. I did that last Tuesday. I put in silk sutures. The boy today is almost ready to leave the hospital. The only thing I did when he came in, although I do not use iodine any more, I used it in that case. I never use it in abdominal cases. I am not in favor of the Carrel-Dakin treatment. Not that I have had much experience in the treatment, but I have heard a great deal about it. I have tried to use the Carrel-Dakin solution in one or two cases but so far I have had no good results. I believe that castor oil and balsam is the best there is. I know it does good and we are loth to give away the things that have done us good. The Carrel-Dakin treatment has to be used continuously. If you have an interval of no treatment or a lapse in treatment, you have lost the whole value of the Carrel-Dakin solution.

GASTRO-ENTEROLOGY.

In his Chairman's address before the Section on Gastro-Enterology and Proctology of the American Medical Association at its Sixty-Ninth Annual Session in Chicago, June, 1918, Anthony Bassler, New York (*Journal A. M. A.*, Sept. 14, 1918), congratulated the members of the specialty on the recognition of the subject by the Association and also on the government's recognition, as was advised in the Chairman's address of last year. Our work, he says, in the war is tremendously important, and the two greatest epochs in the history of the specialty that are anywhere recorded have been accomplished in little more than a year's time, namely, the recognition of this work by the largest existing medical association, and the recognition by the army authorities of the fact that men so trained would be valuable additions to an army medical staff.

MODERN TREATMENT OF BURNS*

By FRED S. CLINTON, M. D., F. A. C. S.
Tulsa, Oklahoma

The casual perusal of the literature revealing the multiplicity of treatments proposed for burns of all degrees and kinds from time immemorial is strongly suggestive of the lack of uniformly satisfactory methods of dealing with this painful and oftentimes disabling or destroying condition.

It is quite unnecessary to consume your time in recapitulating the various medicaments and methods, as this information can be secured from any well written text-book or encyclopedia.

We have had more or less experience with many plans of treatment including the open and closed methods, the oil and dry plans, and believe the paraffin wax or closed method of treatment of burns as described and employed by Dr. Wm. O'Neill Sherman gives the most uniformly satisfactory results of any to date. Inasmuch as he and his associates have treated during the past seven years 31,448 first and second degree and 4,683 third degree burns, having used thoroughly and scientifically every known method, we feel that this method should be accepted as authoritative, and we have made his description of the technic as submitted to the Committee of Medical Research of the Council of National Defense, our basis for the management of burns in the Oklahoma Hospital.

Credit for the introduction of paraffin wax in the treatment of burns should be given to Barthe de Sandfordt, who first used it sixteen years ago in China. His experience resulted in placing on the market "ambrine" and this has been followed in turn by the introduction of "parresine", "redintol", "stanolind", "cerelene", "mulene" and other trade named paraffin products, as well as formulas developed by Col. Hull and Dr. Torald Sollman. They all seek to seal the wound in a wax cotton splint to exclude air, immobilize tissue without interfering with cell growth and proliferation, and to facilitate change of soild dressings.

The secrecy maintained as to all the exact ingredients and amount added to a paraffin base has doubtless hindered the development of a perfect product, however, the use of paraffin or the various combinations of which paraffin is the base in the treatment of burns or other granulating surfaces, has been a distinct advance in surgery. As all of the combinations have not less than 95 per cent. paraffin in them, it is highly important that the paraffin be chemically pure and free from water. The presence of foreign matter is likely to irritate or contaminate and it must be water free to be painless.

Dr. A. J. Hull, R. A. M. C., says: "Treating paraffin with superheated steam seems to change its character, making it more soft and flexible." Whatever preparation is used should be neutral and non-irritating and should have a low melting point, be adhesive, flexible and elastic.

Dr. Sherman says: "A properly prepared pharmaceutical product is solid when cold (very much the same gross physical appearance as beeswax), and becomes as thin as water when heated at 140 to 150 degrees F. It has a very low melting point. Heating eight to ten minutes to 240 to 250 degrees F. renders it aseptic. It is analgesic and relieves pain almost entirely after the first twenty-four hours. The discomfort during the first twenty-four hours, however, is less than with other treatments. The combination wax cotton dressing forms a shell which acts as a local incubator under which repair and proliferation rapidly take place."

Management of Patient Recently Burned.

As soon as received in the hospital, unless previously administered, a hypodermic of atropin and morphine is given, patient placed in a warm bed, and as soon

*Read in Surgical Section, Tulsa, May 15, 1918.

as reaction from shock has taken place clothes are removed, all blebs are punctured and readily detachable portions of epidermis which might interfere are lifted off with sterile forceps and sponges utilized to evaporate the excess fluid, followed by the use of electric fan to promote the drying; after which, as soon as practical, the properly prepared wax heated to from 130 to 150 degrees F. is applied by an atomizer directly to the entire wound extending from a half to an inch beyond the burn. Upon this is placed a thin layer of specially prepared cotton upon which is applied with a camel's hair brush a thin coat of heated paraffin, this to extend also a half to an inch beyond the edges of the wound. Over this is applied gauze held in place by gauze roller bandage or binder. Symptoms are met as conditions or experience demand; gastro-intestinal complications cared for by careful diet and elimination at first and the subsequent use of such drugs as bismuth, salol, or whatever seems indicated. The urinary complications are kept under observation and as a rule the free use of water is indulged and urotropin, salol, benzoate of soda or other indicated drugs employed.

Dressings are changed for the first two or three weeks every twenty-four hours; care is exercised when changing the dressing to not disturb young granulations or traumatize the injured area. Gasoline of high specific gravity or benzine is very satisfactory in cleansing the wound because of its anesthetic action and solvent properties as well as its rapid evaporation promoting the drying of the wound. The only solutions outside of the gasoline or benzine we use are normal salt, boric acid or Carrel-Dakin, as conditions may require. It is highly important to not use escharotic antiseptics or peroxide of hydrogen which destroy granulation. One must likewise learn to recognize and treat the patient as well as his wound.

Materials essential to facilitate the use of paraffin wax treatment of burns: benzine, normal salt, Carrel-Dakin, boric acid or some cleansing nonirritating antiseptic solution, sheet-cotton, gauze, bandages, camel's hair brush, electric fan or dryer, electric hot plate, Sherman or De Villbis paraffin wax atomizer and properly prepared paraffin wax.

Practical Points.

(a) The paraffin wax dressings must be discontinued when systemic toxic symptoms such as fever, rapid pulse and restlessness supervene accompanied by local pain, edema, lymphangitis, and other evidences of infection. Gauze moistened in nonirritating antiseptic solutions may be substituted, encouraging free drainage and immobilizing the parts. Promote elimination, nourish the patient and modify pain, which latter may be controlled by thermolite. All dressings are removed during application of light.

(b) The wound must be dry and clean but not traumatized.

(c) The sheet-cotton must be very thin and applied immediately after the spray, as it acts as a binder and should adhere to the under as well as upper layer.

(d) Time of dressing may be shortened by proper planning and use of right materials as well as experience.

The relief from pain, the rapid cleansing of the wound, the shortening of the time of healing, the diminishing scars, lessened disability and death rate, and the availability of the materials for use in this distressing condition inseparably connected with war or industrial development stamps the paraffin wax cotton treatment as one of the greatest advances in modern medicine. This standardized treatment supported by the weight of military authority and popularized by the demands of a progressive profession is springing into wonderful favor.

Discussion.

Dr. J. N. Jackson, Kansas City: Mr. Chairman, I cannot intelligently discuss it as I have not treated a burn in several years. I think the way Dr. Clinton uses it is very good. Dr. Cole of New York discussed the method he used—he

first cleansed the granulated area to get it absolutely dry, then covered it with a plaster. Later used oxide dressing. Used no water whatever on the surface. I have used this and found it good. Adhesive plaster will stick to the edge, but these stick to the end when the dressings are changed, and we do not have any tearing of the surfaces. We used to use the old fashioned dressing. When you first take off the dressing you will find pus and it looks dirty. Wipe it with a dry cloth and it will heal rapidly. I have had no experience lately but I think this method is good.

Dr. F. L. Watson, McAlester: The first few years that I spent in Oklahoma I had a great many burns to attend to. I became a little egotistical and thought I knew how to handle burns. However, I realize how extensive the subject is. In gas burns the swelling is enormous and we put on a circular dressing and make room for the swelling. It used to be stated by the best books that when a man was burned over half the skin surface it was necessarily fatal; such is not the case. I know I have treated them when they were burned over two-thirds of the body. There is something else that is essential and that is the absence of water from these burns. If you have a slight burn over half of the body, you can dress it most any way you wish and the patient will get well, but take a man who is burned from the belt up, including the head, his recovery is more difficult than when burned on the body only.

Major A. L. Blesh, Oklahoma City: I am sure that the subject of burns is of great interest to every army man because we get a great many cases of burns to treat in the army—gas and other burns. The army now is treating burns with the paraffin method. I thought it would be of interest to you to know the formula as we use it. The trouble with paraffin itself as we receive it in the open market is its flexibility. In a few hours the drying will cause it to check and it will not exclude air. The raw nerve ends are exposed to the air and the raw ends become sore and bleed. With paraffine the pain is almost immediately relieved. The coat must be very thin so it can move with the muscles underneath. The muscles are kept in constant motion.

Another beautiful thing about paraffin treatment is that muscle spasm is relieved.

The formula is as follows: Parawax 870, yellow beeswax 100, rosin 30. Add a little gutta percha for flexibility.—Hospital University of Pa.

This is mixed over the fire until thoroughly mixed and then it is put into sealed tubes. When used, it is warmed up and put over the burn. We use nothing else. There are some burns on which we do not use this: the deep burn for instance. It is so deep we know there will be infection. We treat the third degree burns the same as any other wound. The deep surgical burns are not painful. As soon as the skin is destroyed there is no pain. We treat these deep burns just as we do any other wound in the army.

Dr. Le Roy Long, Oklahoma City: I believe this is a very important subject, for burns have to be treated by every doctor, and up to a few months ago there was a very sharp division of opinion in reference to burns. Some of us feel very much like the surface should be covered up, others think we should have some uniform procedure. I have seen many covered with wet dressing, etc. It is a subject we should get settled at once. These people should have the proper emergency treatment.

Question: How long should you keep up this paraffin dressing?

Dr. H. C. Weber Bartlesville: How do you protect the arm when they move around without any dressing?

Dr. Clinton, closing: Paraffin wax dressings should be used from the outset. Of course every one has treated burns, but all will not admit it. All who have treated them are looking for a new way. In reference to surgical dressing, of course the danger is diminished by using gauze instead of the old dressing, used

when Dr. Blesh and I first studied medicine a long time ago. We use the usual rules of bandaging. In reference to doctors preparing their own dressings, it is highly important that this paraffin be water free and free from all contamination, and we can buy it cheaper than we can properly prepare it. The price ranges from 15c to $1.25 a pound for the various products. Our experience, of course, has not been so extensive as some of the others, it has not been satisfactory simply putting the film on and letting it alone, but it has seemed better to follow the plan that has been recently published in using the cotton dressing with the bandage.

With reference to the time of keeping this up, of course you keep it up until the burn gets well unless toxic conditions exist. I think this about all of the questions. I thank you very much for the discussion.

Dr. Blesh: Mr. Chairman, may I add a little to my discussion? Sometimes in extensive burns we use what we call the paraffin gauze and that is merely a protective dressing and can be taken off. It should be added from day to day as a fresh coat is put on.

DIAGNOSIS OF STONE IN THE KIDNEY AND URETER*.

BY J. HUTCHINGS WHITE, CAPTAIN, M. R. C.
MUSKOGEE, OKLAHOMA
(NOW AT CAMP GREENLEAF)

The difficulity of accurately determining whether or not a stone exists in the kidney or ureter, prior to operation, is an obstacle of no small proportion. With the cardinal symptoms of colicky pains over kidney, posteriorly or anteriorly, radiating downward and forward into the testicle or labia, frequent urination of bloody urine or urine containing blood, sometimes nausea and vomiting, a diagnosis of kidney stone is the natural conclusion. Many times, however, the X-ray or operation fail to reveal the stone.

The object of this communication is to review some of the important points in diagnosis of stones of the kidney and ureter. Such a review will convince one of the difficulties of correctly diagnosing this condition.

The majority of these cases coming for operation are between twenty and forty years of age. The larger number which manifest symptoms are between ten and twenty years of age. In Cabot's Series there were 108 men against 46 women. This ratio, however, does not agree with other observers. The right side is more frequently involved than the left. In 157 cases Cabot reports both sides involved in 24. Pain, colicky in 96, or two-thirds of cases; the presenting symptom in 50, occasional or unimportant symptom and elicited only on careful questioning in remainder. The remaining cases presented the following symptoms: dull pain referred to in the region of the kidney, 32; pain in the right lower quadrant, 12; backache, 8; pain referred to the bladder, 7; hematuria, 7; vague abdominal pain, 4; pain in the sacro-iliac or lumbar region, 3: epigrastic pain, 2; chills and fever, 1; vomiting, 1.

Braasch and Moore, of Mayo Clinic, report 294 cases of stone in the ureter. They claim that mechanical irritation caused by stone itself seldom produces pain; that pain is due to two conditions, namely: "(1) because of intravenous tension as a result of urinary obstruction, and (2) because of localized infection changes.

In this series pain referred largely to renal area in 197 (67 per cent.); to upper abdominal quadrant in 45 (15 per cent.); to region of lower ureter in 28 (9 per cent); and to suprapubic area in three cases. No radiation of pain in 16 cases and no pain at all in five cases. Vesical irritability was reported in 218 (74 per cent.). "This condition occurs so frequently that its absence is of distinct value in differential diagnosis. Although it more often occurs only at the time of pain, it may

*Read in Surgical Section, Tulsa, May 15, 1918.

continue for a day or two following. Occasionally it may be persistent over longer periods and may be the predominant symptom." The urinalysis they consider of little value. Gross hematuria of more value in diagnosing kidney stone.

Israel claims to be able to feel urethral stones per vaginam and rectum in 39 per cent. of his cases. Out of 80 cases of stone in lower ureter 48 occurred in male, in three of which stone could be felt per rectum; 32 in females, in seven of which stones could be felt per vaginam.

Bearing in mind the various locations of pain in ureteral and kidney stones, it is not difficult to see that it would be easy to make a mistake in diagnosis. When these colicky pains occur on right side and are referred to the gall bladder region and are accompanied with nausea and vomiting, one might readily call it gall bladder trouble; or in cases of pain in the lower right quadrant it might be easily mistaken for appendix trouble. Some time ago a case was referred to me with history of pain in right loin, nausea and vomiting, little temperature, pain shifting during night down to vaginal region; urine showed blood and pus cells. The doctor referring case said he first thought it was a case of appendicitis, but when pain shifted with urinary findings, concluded it was ureteral stone. Later development proved case to be one of appendicitis.

Eight of Braasch's and Moore's series gave history of radiation of general abdominal pains, vomiting and intestinal spasm, suggestive of obstruction. Of the number, three had been operated for intestinal obstruction. In 12 cases the gastric disturbance was the important symptom. In Cabot's series, 26 had operations without relief of symptoms. The operations were as follows: appendectomy without relief of symptoms, 10; exploratory laparotomy, 7; fixation of the kidney, 4; operation for gall stones, 1; adhesions not found to exist, 1; decapsulation of the kidney, 1; salpingo-oophorectomy, 1; suprapubic cystotomy, 1.

The direction in which the pain was referred was inquired into in 42 cases and resulted as follows: pain referred along the course of the ureter, 13; referred to the glands, 10; referred to the back, 9; referred to the groin, 3; referred to the testes, 2; referred to the thigh, 3; referred upward toward the chest, 1; referred to the opposite side, 1.

The urine normal in fourteen per cent., albumen seventy-four per cent., blood microscopic or macroscopic sixty-eight per cent., pus present in sixty-eight per cent. Of the cases presenting normal urine, fifteen were cases of stone in ureter and seven, stone in the kidney.

One hundred and twenty-seven cases X-rayed, eight or six per cent. were persistently negative. This Dr. Cabot claims more favorable than usual (Mass. General Hospital). He believes X-ray fails to detect stones in from ten to fifteen per cent. of cases.

Among the sources of error to which I wish to call your attention are those which occur in the use of the X-ray. This is by no means an infallible method of diagnosis. Braasch and Moore claim it is doubtful if an accurate diagnosis of stone in the ureter can be made from X-ray data alone in more than sixty per cent. of the cases. Stones of the ureter are found at the narrowing of the kidney pelvis or beginning of the ureter, at brim of pelvis and where the bladder and ureter join. They may be confounded with shadows produced by prolonged transverse process of vertebra, fecal concretions and phelboliths. The stone may be situated over a bony prominence and shadow not distinguished; such an instance occurred in one of my cases. Ureteral catheterization with X-ray catheters and picture, aids in detecting these stones.

Size and character of stone. The stone may be very small and easily overlooked or it may be of such a character as not to produce a shadow (uric acid). Stones of the kidney are usually of such size and consistency as to be readily detected by X-ray.

The symptoms which are the most reliable are plain in the kidney region, more valuable when radiating to bladder, frequent urination during attack of pain whether urine is normal or contains blood. Bloody urine at time of pains

gradually decreasing after pain is discontinued. These symptoms should always call for X-ray, but they are not to be ignored should X-ray be negative.

Discussion.

Dr. Horace Reed, Oklahoma City: Mr. Chairman, this method is very valuable. I have found in many cases that the lodgment is in the lower part. There is a way of confirming the diagnosis where the ureteral stone is lodged in the ureter, that is by the appearance of the ureteral opening, according to the size in which the stone is lodged. It would be a sign of something taking place. One can be aided in this procedure by the use of indigocarmine, 2 1-2 grains, and 20 c.c. of sterile water. By means of this injection one will have no difficulity whatever. The ureteral opening will cause the kidney which is in action to throw off the color of deep blue. There is a swelling according to the size of the stone in the bladder walls. I have found a number of persons who have these stones, very often rather stout, and therefore it is hard to get a shadow, but with persistency one usually succeeds in finding the shadow.

ANOMOLIES OF THE BILE DUCTS.

D. N. Eisendrath, Chicago (*Journal A. M. A.*, Sept. 14, 1918), says that the rapid increase of operations on the gallbladder of late years has been accompanied by a series of reports of injuries to the ducts and of hemorrhages from the vessels adjoining. The most important factors in causing such accidents are lack of knowledge on the part of operators, that variations in the mode of union, course and length of the cystic, hepatic and common ducts are far more common than our text books on anatomy have led us to believe, and the presence of anomalies in the mode of origin and course of the cystic and hepatic arteries resulting in hemorrhage, and the inclusion of the cystic and hepatic arteries in the grasp of the artery forceps or in a ligature. The author gives a list of the vascular anomalies that may occur according to Rio Branco and Descomps, and also those of the cystic and hepatic ducts and their relative frequency. The cystic duct may lie parallel to the hepatic or may describe either a quarter, half, three-quarters or a complete spiral around it. These are of the utmost importance from a surgical point of view. He sums up as regards blood vessel anomalies and the accidents they may cause; the right hepatic artery running close to the cystic duct and neck of the gallbladder or arching far to the right of the main hepatic duct, a segment of the wall of the right hepatic artery may be torn off during cholecystectomy. When the right hepatic artery or the cystic artery crosses the front of the main hepatic duct, they may be torn during the removal of calculi from the cystic or hepatic ducts. The same is true when the main trunk of the gastro-duodenal artery or a large branch crosses the lower end of the common duct. When the cystic artery arises from the gastro-duodenal, it can de easily overlooked and severe hemorrhage follow, and when two cystic arteries are present one of them may be divided unless the possibility of such an anomaly is considered. As to bile duct anomalies, the short parallel type is chiefly of interest because of its adherence to the hepatic duct, which may be torn. The long parallel type is of interest for the same reason, and in addition thereto for two other reasons: First, a calculus lying in such a long duct may compress the hepatic duct and cause obstructive symptoms, and, second, it has been proved by Eisendrath's experimental studies that such a duct may dilate and form a new gallbladder and cause recurrence of symptoms. The spiral types are of interest, first, because a contained calculus may compress the hepatic or common duct, and, secondly, too strong traction of the gallbladder during cholecystectomy may tear off such a spiral duct, leaving a torn end difficult to identify, and, finally, if we wish to remove calculi from such a spiral duct or wish to excise the duct itself we must remember its close proximity to the hepatic duct throughout. The common duct is extremely short in both the short and long parallel types, especially in the latter, varying in length from 1 to 2.5 cm. The common duct varies greatly both in length and caliber. The percentage of these anomalies as found by Eisendrath are given and they are shown in the illustrations.

CHRONIC PUS FOCI—COMMON LOCATION.*

By W. H. LIVERMORE, M. D.
Surgeon to Chickasha Hospital, Chickasha, Okla.

It is interesting to note the steps in our knowledge of focal infection. As the early investigators began to see the truth and were convinced that inflammatory rheumatism was pus in the joints and that this pus must of necessity reach the joint through the blood stream, they began to seek for the focus or place of entrance of the pus into the blood stream.

The early investigators, as Billings with his masterly mind to suggest and point out the possibilities and Rosenow with his wonderful control of bacterial culture, first had their attention drawn to such organs as the appendix, gall-bladder, etc. It was not till 1916 that Rosenow realized that the tonsils and teeth were the most common source. Price of the Dental Research Laboratory, Cincinnati, has done much valuable research work and has shown us the prevalence of infection in the jaw and how to tell infected jaws.

All who have been making a thorough search for pus foci in the body have come to realize that the most common pus carrying areas are the maxillary bones and the tonsils. Let us look a little more closely at these structures to see why they are apt to be the harborers of chronic pus foci.

The tonsils are compound follicular glands, that is, they contain a number of aggregations of lymphoid tissue similar to that of the solitary glands of the intestines. The inner surface of the tonsils is covered by the oral mucous membrane and presents from ten to fifteen puncture-like orifices or crypts which lead deep into the tonsilar structure. These crypts are lined by extensions of the oral mucous membrane. The secretion of the tonsil is derived from the mucous glands in the mucous membrane lining the crypts, and containing numerous epithelial and lymphoid cells. Inspissation of the mucous secretion in the crypts of the tonsils gives rise to the formation of cheesy plugs, which contain decomposing epithelium, emit a foul odor and produce fetid breath. Deaver in his anatomy, "1900 edition," says: "it is quite probable that germs in the stagnant secretion in the crypts of the tonsils enter the lymphatic vessels, and cause many of the cases of inflammation and tuberculosis of the keep cervical chain of lymph glands."

The blood supply of the tonsil, like the blood supply to the rest of the throat and face, is abundant. It often happens that these crypts become closed at the fascial openings, either by scar tissue or by the pillars becoming adherent over them. When this happens we have formed a blind pouch lined with oral mucous membrane which continues to secrete and fill up this blind pouch with secretion which is infected before the pouch is sealed. This infected secretion is carried off thorugh the lymph vessels unless the lining of the crypt becomes eroded, when the secretion may and does find direct access into the blood stream. The erosion of the mucous lining may be so slow that little inflammatory reaction takes place and no thrombus forms in the neighboring vessels. The vessel walls gradually erode so that the contents of the crypts may be discharged directly into the blood stream. When closed, these crypts contain the staphylococci the growth of the bacteria may become so rapid and reaction so great that they abscess and find exit thorugh the oral surface.

Our bacterial study of these sealed crypts in the small tonsil has returned a pure growth of streprococci so many times that we have come to look on the staphylococci and other organism as a contamination which occurred during taking culture. These closed crypts carry infection for years and the body becomes so immune to the bacterial inoculation from them that little reaction results unless something occurs to increase the virulence of the organism or to lessen the resistence of some part or parts of the body.

*Read at the 26th Annual Meeting, Tulsa, Okla., May 15, 1918.

The teeth with their setting in the maxillary bones, whose blood supply is not equalled by any other bones in the body, form a favorable location for chronic pus foci. Infection of the maxillary bones, along the tooth sockets, which produce only a slight destruction of bony tissue and the formation of no sequestrum would produce vast destruction of bone and the formation of quantities of sequestrum in any other bone in the body. I think the reason for this difference is the wonderful amount of blood supply to the maxillary bones. This provision of nature to protect bones so constantly subjected to injury may and does have an injurious effect, especially when we try to improve on nature. For instance, a tooth is injured either by being broken so as to kill the nerve or by decay of the of the tooth so that the nerve is killed. When these nerve canals are filled, they are usually not filled to the apex of the tooth root and so a dead space is left where, if infection is not already present, it is sure to take place, and as the blood supply does not get to this dead space, it is an admirable incubator, for pus, with no exit but the blood stream. These teeth and tonsils with sealed crypts will carry pus for years. As long as the pus is killed off in the blood stream apparently little damage is done, but when the pus acquires an election for some organ or tissue of the body, that particular organ or tissue is subjected to the micro-organisms circulating in the blood stream.

SURGERY OF ACCIDENTS.*

By J. CLAY WILLIAMS, M. D.
PICHER, OKLAHOMA

In my absence from the medical meeting, I was selected to write a paper on "Surgery of Accidents". In writing this brief paper I hope to throw some light and cause a discussion on the best and most modern means of treating accidents. We are in a great war, and the medical profession will play a great part in treating wounds scientifically. We are meeting all the problems that are confronting us and our brilliant achievement in helping the wounded is bringing the medical profession before the world as the grandest and noblest on earth. Our sacrifice and conception of the vast amount of work there is before us in helping the wounded and caring for the sick. Our greatest incentive in the work is to relieve some one in trouble. Every other profession has hours to rest, time to devote to their families, not so with the physician. Their chief aim is to relieve regardless of compensation.

I will give you the relative percentage of accidents of the various civil occupations.

Teaming	22.9 per 1000 employed.
Quarrying	15.7 per 1000 employed.
Mining	14.6 per 1000 employed.
Building Trades	11.4 per 1000 employed.
Chemical manufacturers	9.2 per 1000 employed.
Electrical manufacturers	6.3 per 1000 employed.
Glass industries	4.9 per 1000 employed.
Printing	2.8 per 1000 employed.
Average of all manufacturers	9.5 per 1000 employed.
Farming	11.11 per 1000 employed.
Average of all railroad employees	18.1

The total of all accidents among the working people of the U. S. is so much greater than among European working people, and it is altogether so appalling in its magnitude and its continuance without any marked dimunition, that our legislatures are passing laws in every state, known as compensation acts, in order to induce their employees to have medical attention at once after the accident.

*Read before Ottawa County Medical Society, July, 1918.

In so doing, a great number of accidents that would result in permanent disability is taken care of and the employee returns to his work at an early date: showing the value of immediate accident surgery on the usefulness of the earning capacity of the employees that come under our care.

Consequently, large insurance companies are selecting men among the medical profession as well as the war department that can give the best care to emergency surgery. And the greatest triumphs; during this war have come through a repudiation of cults and different kinds of decoctions. All red tape has been eliminated, and wounds treated from a scientific standpoint. It has been proven beyond a doubt that practically all wounds are infected. We have passed through various treatments—treatment of wounds from different battle fronts in Europe have been gathered, different treatments, until we have eliminated all unscientific treatments, and have adopted the ones that are best. Since Joseph Lister made known the value of antiseptics in operations, we have been using them ever since, although we have departed from the carbolic acid sprays that were used in his day. The realization to be attained in emergency surgery was to get to the patient at the earliest possible moment, destroy the surface contamination of the wound before the system could take up the poisons therefrom. When this war began, disinfectants were still used in treating wounds, and as I have said before, practically all of which are contaminated. The treatment required six or eight months, sometimes longer. There was always a danger of sepsis, necessitating the amputation of a limb. Aside from the fact that a wounded man was kept all this time out of service, so that another man must replace him, there was the expense involved of hospital accommodations, nursing, and vast quantities of surgical attention. Now days instead of using the long drawn out treatments, the contaminated tissue, muscle, even bone and all devitalized tissue that acts as a foreign body is cut away, and by so doing the infection is removed. Unless a man has been for an unusual length of time without treatment or some other condition, I use five per cent. of tincture of iodine, swab out and close the wound. Of course, I leave a small opening for drainage, that is principally a matter of surgical technic. In about 98 per cent of all wounds the primary closure can be used. Under this treatment the wound heals, as a rule, in two weeks. This means an enormous saving in time, in lives, in man power, in nursing, and surgical attention, to say nothing of money. It is one of the greatest things we have learned during this war, and from eighty to ninety per cent of the wounded recover and return to their occupations and to the firing line. Then there is a great deal of blood transfusion, usually by the indirect method. Blood can be kept for several weeks in an ice box without deteriorating. Sodium citrate, two per cent. prevents coagulation.

In all wounds, the hemorrhage must be controlled, in order to prevent hematoma. If not, the primary sutures will be a failure. After a hemorrhage has been controlled, pack the wound for a moment with gauze, then dry thoroughly and apply tincture of iodine. After this is done, use your primary sutures; never using catgut where there is an unusual amount of tension, as you are sure to have a complete failure. In a wound of this character use silk.

The only absolute contra-indications to a primary suture are infection too far advanced for primary reunion and so much disturbance in the circulation of blood and oxygen, general or local, as to favor the proliferation of anaerobes in case of suture, and in complete failure, primary sutures, the cause is attributed to the streptococcus group of bacteria which is responsible for the failure. And you must rely upon the clinical findings to ascertain when to cut the sutures, or drain the wound. It is an evident fact in a great many wounds, especially in lacerated and torn, that Dakin's solution by the drip method has proved a great success in the treatment of such wounds, by using the microscope and examining the discharge from same. I have no doubt in my mind but that we would get extra results with the boracic acid solution, warm, and use as a drip. However, it is not my intention to underestimate the value of a proven disinfectant such as

the Carrel-Dakin solution, depending on the chlorine for its antiseptic properties. I use a great deal of castor oil and balsam of Peru, equal parts in my accidental wound. It has been my experience that it allays pain and it is soothing and has antiseptic properties. It is necessary in suffering to give a hypodermic of morphine or atropine. Of course, give stimulants when necessary. In shocks, atropin is considered the best, you can give strychnine, keep the patient quiet, and use warm applications to body surface. In all cases of hemorrhage, stop the hemorrhage at once, and where the loss is necessary give transfusion of blood or intravenous infusion, saline solution. In removing grease from hands or injured surface, ether is very good, or gasoline. In burns, I have had very good success with paraffin. Warm this to a consistency of oil so that it will not burn the surface. Cover the surface, it makes a desirable cover.

In conclusion, in order to be successful in accidental surgery, it is necessary to be resourceful. That is, to take the situation in hand, and apply things at hand to the best advantage. Stop hemorrhage, sterilize the wound, consider the welfare of the patient, be quick, thoughtful and accurate. As I said in the beginning, it is my object to arouse discussion. If I have failed, I consider my paper not what it should be.

UTERINE INERTIA.

Paul Titus, Pittsburg (*Journal A. M. A.*, Sept. 14, 1918), takes up the subject of uterine inertia with an analysis of a series of cases observed. It is not known, he says, why labor occurs at about the end of 280 days, but if the stimulus to its induction is normal and the uterine muscles tone is good, labor will go on actively and progressively. The propriety of classing uterine inertia as primary or secondary is extremely doubtful. Unless there is some abnormality it is always primary. It may be due to constitutional debility from disease or to early rupture of the membranes and dry labor. We should make a distinction between inertia and exhaustion, the latter being what is ordinarliy understood as secondary inertia. In the author's series of cases there were no maternal deaths, but five infants were born dead or could not be resuscitated from their asphyxia. He calls attention to the danger of using pituitary solution in any stage of labor. It is safest after the expulsion of the placenta, and in this respect is like ergot. He concludes that the differentiation between inertia and exhaustion is important from a standpoint of treatment, that of the former being more or less expectant, while that of the latter should be prophylactic and directed to the obstacles of delivery. True inertia begins in the first stage, and if the membranes are unruptured the use of mild uterine stimulants may be alternated with rest from the use of narcotics until the second stage is reached, when active interference may be necessary. If the membranes are ruptured interference may be required, according to the condition of the mother. This includes Duhrsseon's multiple incisions of the cervix and vaginal cesarean section, both followed by forceps delivery or the use of cervical bags. In the second stage interference is not so serious and is usually by forceps delivery. Frequent vaginal examinations are to be avoided and should be substituted by rectal examinations. Premature rupture is a common cause of inertia in a healthy woman, while constitutional defects, overdistention of the uterus by twins, hydramnios, and frequent pregnancies are also important etiologic factors. Placental retention, with or without hour glass contraction of the uterus, is a common result of the inertia extending into the third stage, and hemorrhage is likely to occur during and after the placental stage.

DR. McGREGOR WINS HONOR FOR BRAVERY.

For remaining at his post of duty in the midst of shot and shell, when his patients and his attendants were being killed round about him, Dr. Frank McGregor of Mangum, has been awarded the British medal for bravery, and cited for special

LIEUTENANT FRANK H. McGREGOR, M. C., U. S. A.
(Attached to British Expeditionary Forces, France)
Mangum, Oklahoma. Dr. McGregor, before entering service, was connected with the Border Hospital at Mangum.

commendation by his superior officers. The story is related by Percy Noel, special British war correspondent. He compares this bravery with the habit of the German physicians who apparently have a habit of running away and leaving their wounded to die when danger approaches. The following is the story of Mr. Noel:

THE FRONT, August 31—The other day at Achiet-le-Grand I saw about fifteen dead Germans lying on stretchers in a very substantial stone building which had been made bomb-proof by concrete for the protection of the German medical officers. The dead men showed no signs of having been killed by the explosion of the shells that had fallen around the dressing station. Apparently they had died from their wounds and want of attention before the British took the town. Several were partly stripped and the wound dressings were only half completed. There were no dead German medical corps men in the vicinity, so the obvious conclusion is that they left the wounded to die and ran for safety when the British attacked the town.

An American medical officer, who was attached to the British Army Medical Corps, serving with the two divisions which fought so successfuly south of Rheims the last week in July, acted quite differently from these Germans. Shells fell around him killing orderlies, and even the British wounded he was attending, but he worked on, setting a noble example to all who were with him.

Lieut. Frank Harrison McGregor of the United States Medical Service has been honored by a British general with the military cross and a citation which reads as follows:

"During the operations from the 21st to the 28th of July northwest of Nanteiul this medical officer displayed the greatest devotion to duty and on the 23rd, 300 casualties passed through his aid post, which was established in the open. Although his orderlies and the men whom he were attending were killed around him he continued at work. The example he set won the admiration of all ranks in the vicinity. The conduct of this medical officer during the whole of the operation has been exemplary and merits the highest award."

KNIFE SWALLOWING—REPORT OF CASE.

By D. F. STOUGH, M. D.
Geary, Oklahoma

J. W., male, about 28 years of age, while an inmate of the Granite reformatory, swallowed a knife which was about 6 1-4 inches long. The knife was an ordinary silver plated one, with the usual handle, but the blade was only 2 1-4 inches in length, having been ground off until it was nearly triangular in shape. About three months after the incident he began to have pain above the pubic bone and some months later a swelling appeared at that point which finally ruptured and began to discharge. August 19th he came to me presenting a large mass just above and a little to the right of the symphysis; there was a discharging fistulous tract about 1 1-2 inches to left of symphysis. Other history was negative. He was referred to the El Reno Hospital for operation, the operation disclosing a large fibrous mass which was drained. Five days later fecal matter began to discharge through the sinus. He remained in the hospital fifteen days and returned to his home. September 7th, while dressing the wound, I observed a piece of steel protruding in the original fistulous opening. Under local anesthesia I removed the knife; the handle extending down into the bowel being covered with fecal matter of a pasty consistency. After I removed the knife he admitted swallowing it, but stated he supposed it had passed.

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EDITORIAL

THE PHYSICIAN AND THE NEW SELECTIVE DRAFT REGULATIONS AND LAW.

The *Journal* and its Editor and the Adjutant General's Office has been the recipient of many communications as to the status of Oklahoma physicians under the new draft law or what is commonly called the 18 to 45 draft.

We will attempt here to make some comment on the situation and the probable line of action to be taken as to physicians affected. Of course it is to be positively understood that it is only an opinion, subject to error and modification, and, positively also subject to special regulations which may hereafter be promulgated by the Provost Marshal General after consultation with the Surgeon General's Office.

Legally and technically a physician is entitled to the same treatment as a bricklayer, blacksmith or lawyer at the hands of the Exemption Board. But it should not be forgotten that exemption boards have the power to inquire, and should inquire into the status of each registrant as such—not considering for a moment that he is a physician or whatever he may be, but that he is potentially a soldier—a fighting man physically fitted for trench work or other active army service. While the board should not take into consideration the possibility that the physician registrant could secure a commission in the Medical Corps by application therefor, the board members are simply human and will take into consideration such facts. The boards in some instances may err in this respect and send to active service a physician with many dependents, such as a wife, mother, father or children, but it is extremely likely that should such physician appeal to either the State Adjutant General or to the Provost Marshal General, the case will be remanded with the advice to treat the registrant exactly as other registrants are to be treated—to forget that he is a physician.

This opinion is based solely on the theory that our Constitution and basic law treats all citizens alike. Ours—identical basically with that of the British Empire—makes no distinction when it comes to citizenship. If the Army needs

so many electrical workers, bricklayers, stenographers or physicians, the various state adjutant generals are called on to supply their proportionate share or number of each. This demand is based on the United States Constitutional provision which makes amenable for military service every male subject within certain ages. It is our opinion that any physician, having no dependents, qualifying as to the physical fitness and usual average intelligence, and within the draft age, will be and should be drafted, not as a physician, but as a soldier. Many observers in certain localities will add the hope that those in that class may be assigned as privates in the Medical Department to assist the self-sacrificing physician who long ago closed his office, sent his wife and one or more babies to the farm or back to the folks at home, accepted his commission and with it hundreds or thousands of dollars less income and is partiotically serving his country.

Draft boards have the power, and will use it—to inquire if a physician and his wife jointly have enough income to provide for such physician's wife and children when he may be called into the service as a $30.00 a month private. The fact that he drove a several thousand dollar car, technically, cuts no ice in the inquiry. The decision should be based on the joint means of the family and estimate what they will have to live on should he and the Government send the dependents the monthly stipend allotted to the private soldier.

It is possible that the regulations may be so amended as to give the Provost Marshal General (Draft Boards and the Adjutant General of the State) the power to decide if a physically fit, single physician with no dependents is not imperatively needed in his location, rather than in the Army; this idea, of course, is purely speculative and is based on the information that already certain localities in Oklahoma are wofully short of physicians due to the universal call to enter the Medical Corps. It does not apply to most Oklahoma cities or average sized towns, but in many instances the rural community is already hard hit. Some have lost all their doctors.

It is our opinion that the State Council of Defense, Medical Section, should resurvey the State, that the committee of each county society should carefully estimate probable future needs and be warned in time to not, in their enthusiasm, milk any particular community dry of doctors and leave the women and children to suffer for medical attention hereafter. In those cases where the physician subject to the draft is really more needed at home, where he cannot be adequately replaced—and we must not forget that competent physicians are now unobtainable for new locations—such physicians should not only be advised to do so, but should be ordered by his board and the committee to stay where he is and serve his people.

OKLAHOMA DRAFT BOARD EXAMINERS MAKE A CREDITABLE SHOWING.

Medical members of Local and Advisory Boards are to be congratulated on the very good results achieved in sending many thousands of men to contonment. Official information just issued discloses that Oklahoma sent: from February 10th to July 13, 1918, 16,903 men. Of these 16,256 were accepted and 647, or 3.82 per cent, rejected.

Comparatively this is very good. Alabama stood highest in the matter of rejections having 17.46 per cent. returned. South Carolina, South Dakota, Vermont and Georgia had more than 10.00 per cent returned, the average of all states being 5.83 per cent.

New Jersey stood first with only 1.93 per cent. returned. Oklahoma stands twelfth from the top and while we are proud of that record every effort is being made by the proper officers to reduce the returns from cantonment to the vanishing minumum point.

A comparative statement showing the number rejected by the draft boards

of each state might throw some additional light on the subject. Possibly the boards in some states hewed so closely to the line that they sent only what they deemed the physically perfect man.

Not bearing at all on the matter, but as a piece of pleasing information, all the states sent to contonment and had accepted during the time 809,138 men. This looks like a very good record for a country lamentably unprepared twelve months ago.

LOCAL BOARD MEDICAL MEMBERS DRAFTED.

So many medical members of Local Boards have resigned to accept army commison in the Medical Corps that a tentative agreement, it is said, has been reached between the Surgeons Generals of the Army, Navy and Public Health Service, the Provost Marshal General acquiescing, which in effect requires express permission from the army authorities before any local board member may be accepted for a commission. The agreement or order does not apply to members of the medical advisory boards. It is conceivable, however, that such order may later be invoked as to those boards as many of them have been virtually nullified on account of so many physician members entering service. Already two boards have been consolidated due to lack of available physicians and a further consolidation is contemplated in many sections of the State.

Any medical member of a local board may apply for commission if his place as such member can reasonably be filled by some older man. However, a scrutiny of the list of local board examiners for Oklahoma indicates that as a rule they are either exempt by reason of physical deficiency, overage, dependency or actual need as physicians to the community.

PLATINUM A PRESSING NEED FOR THE ARMY. This metal is so in demand for a proper conduct of the War Industries Board, Dr. F. F. Simpson, Lieut. Col., M. C., U. S. A., has issued an urgent appeal involving the following points:

Every *doctor* and *dentist* in the country is requested to go carefully over his instruments and pick out *every scrap* of platinum, not absolutely essential to his work, however small or insignificant he may consider it, and hold for the service of his government. Delivery may be accomplished as follows:

(a) They can be given to a proper accredited representative of the Red Cross who will shortly make a canvas for that purpose.

(b) They may be sold to the Government through any bank under the supervision of the Federal Reserve Board. Such banks will receive and pay current prices for platinum.

Warning is issued to turn over no platinum to any person without full assurance that such person is an accredited agent of the Red Cross in that particular matter.

A close search through the offices of Oklahoma physicians will reveal many instruments and appliances having platinum parts, which for the time of the war may be either dispensed with or substituted for. An instance of this is the old fashioned Paquelin cautery with its platinum parts, many such are in the State, and they may be easily, and to the writer's idea, profitably, substituted for by the use of small tinner's irons. Many surgeons have for years preferred such for the reason that they are cheap, practical and devoid of the danger incident to the use of the Paquelin, which must reduce benzine or gasoline in a dangerous situation before being used. There are certain other office appliances that might be substituted for or entirely dispensed with.

Each physician should be able to contribute a mite in this respect and when such are collected the aggregate will be a very respectable offering in a time of need.

PERSONAL AND GENERAL NEWS

Dr. E. E. Darnell, Colony, has moved to Clinton.

Dr. J. E. Cullum, Earlsboro, has moved to Shawnee.

Dr. K. P. Hampton, has moved from Soper to Hugo.

Dr. E. B. Hamilton, Wilburton, has moved to California.

Dr. C. R. Morrison has moved from Red Oak to Wilburton.

Dr. A. H. Herr, Okmulgee, has been named city physician.

Dr. R. C. Farris, Porum, has been ordered to active army duty.

Dr. C. M. Bloss, Okemah, attended the Rochester Clinics in August.

Dr. W. B. Hudson, Yale, has received his Medical Corps commission.

Dr. B. Watts, Okemah, has been commissioned in the Medical Corps.

Dr. J. E. Yarbrough, Erick, has been commissioned in the Medical Corps.

Dr. T. H. Flesher, Edmond, has been ordered to Camp McArthur for service.

Dr. J. Matt Gordon, Weatherford, has been commissioned in the Medical Corps.

Dr. J. S. Vittum, Muskogee, recently suffered a fracture of the fibula while on a fishing rtip.

Dr. S. N. Stone, Edmond, has been discharged from the army on account of physical disability.

Dr. J. M. Cooper, Oklahoma City, has been ordered to Camp Humphreys, Va., for army service.

Dr. R. D. Lowther, Norman, has been ordered to report at Columbus, N. M., for army service.

Dr. L. Haynes Buxton, Oklahoma City, took his vacation in Colorado, returning early in September.

Dr. E. W. King, Bristow, has been ordered to report for army service to the M. O. T. C., Ft. Riley, Kansas.

Dr. E. L. Evins, Wilburton, has been appointed Local Board Examiner vice Dr. J. A. Munn who has entered army service.

Southern Medical Association will hold its 12th annual meeting at Ashville, N. C., November 11-14 according to announcement.

Dr. T. B. Hinson, Enid, has been appointed an Assistant Surgeon in the Navy and ordered to Oklahoma City to assume charge of the Naval examinations.

Dr. W. C. Cummings, Okmulgee, has returned to his home after an absence of several months in Chicago where he was doing special work at St. Luke's Hospital.

Okmulgee announces the opening of its new thirty-three bed hospital. Dr. W. C. Mitchener is president of the board of control and Miss Katherine Watts superintendent of nurses.

Dr. E. F. Lovejoy, an Oklahoma City doctor, recently tried for murder in connection with the death of Ruby Alexander, drew a disagreement at the hands of the jury and will be tried again.

Dr. W. Eugene Dixon, Oklahoma City, was a guest at the annual meeting of the Utah State Medical Association in September. He read a paper before the Eye, Ear, Nose and Throat section.

Pawnee, Oklahoma and Grady county medical societies have passed resolutions disapproving in general of any movement of physicians into their counties to take the place of physicians absent in war work.

Grady County Commissioners refused to pay for expenses incident to operation of the Chickasha "Detention Camp", holding the camp to be beneficial to Chichaska rather than the county—a clever distinction indeed.

Dr. W. B. Pigg, Henryetta, has returned from a three months trip via "Ford" through Kansas, Missouri, Illinois, Indiana, Kentucky, Tenneesee and Arkansas. He enjoyed the trip immensely and returns much improved in health.

Dr. C. A. Thompson, Muskogee, who has been Medical Adie to the Governor since November and in charge of Medical Advisory Boards and Local Boards as to medical matters, has been promoted to Major in the Medical Corps.

Dr. R. B. H. Gradwohl, St. Louis, has been appointed Organizing Director of Naval Base Hospital, Unit No. 19, with the rank of Lieutenant Commander. During his absence the Gradwohl Laboratories will be conducted by the able corps of managers heretofore connected with Dr. Gradwohl.

Quarterly Medical Clinics, an advertisement of which appears elsewhere in this publication, is the name of a new publication which is now being launched in St. Louis. The Medicine and Surgery Punlishibg Company, under the able management of Dr. Phipli Skrainka, St. Louis, will issue the Quarterly.

Dr. Hugh L. Scott, formerly of Guthrie, later from Dustin, one of Oklahoma's physicians to volunteer very early when war clouds began to gather, has recently been promoted from Major to Lieutenant Colonel. This is the first and only Lieutenant Colonel of the Medical Corps either Oklahoma or Indian Territory has ever had, and the record harks back to pre-civil war days. Dr. Scott

has always had a penchant for military service. Long before our Mexican embroglio he joined the Medical Reserve Corps and was assigned to Ft. Morgan, Ala., later transferred to Honolulu, then ordered to the inactive list for a few weeks. When the German situation grew tense he again asked for active service, was commissioned First Lieutenant and was shortly afterward made a Major. His promotion to Lieutenant Colonel will be the occasion for congratulatory assurances from his many friends. Those who know him agree uniformly that he is one of Oklahoma's few medical men who should be considered favorably in the light of a man capable of handling any medico-military situation confronting him.

MISCELLANEOUS

TO PHYSICIANS OF AMERICA.

Surgeon General Gorgas has called for 1,000 graduate nurses a week—8,000 by October 1st. 25,000 graduate nurses must be in war service by January 1—in the Army Nurse Corps, in the Navy Nurse Corps, in the U. S. Public Health Service in Red Cross War Nursing. This involves withdrawal of many nurses from civilian practice and necessitates strict economy in the use of all who remain in the communities.

You can help get these nurses for our sick and wounded men by:

Bringing this need to the attention of nurses.
Relieving nurses where possible wholly or in part from office duty.
Seeing to it that nurses are employed only in cases requiring skilled attendance.
Insisting that nurses be released as soon as need for their professional service is ended.
Seeing that your patients use hospitals instead of monopolizing the entire time of a single nurse.
Encouraging people to employ public health nurses.
Instructing women in the care of the sick.

Inducing high school and college graduates to enter the Army School of nursing or some other recognized training school for nurses.

Encouraging nurses to go to the front involves real personal sacrifice and added work on the part of the physician whose duty it is to maintain the health of our civilian second line defense—But the men who are fighting for their country in France need the nurses.

Department of Nursing, American Red Cross,
Washington, D. C.

THE VOLUNTEER MEDICAL SERVICE CORPS.

The Council of National Defense authorizes the following:

Many thousands of blanks for enrollment of the legally qualified men and women physicians of the country in the reorganized Volunteer Medical Service Corps are being mailed by the Chairman of the General Medical Board of the Council of National Defense. With the blank are enclosed a letter and a folder giving all details as to the organization.

The blank which applicants are asked to fill out reads:

APPLICATION FOR MEMBERSHIP IN THE VOLUNTEER MEDICAL SERVICE CORPS.
AUTHORIZED BY COUNCIL OF NATIONAL DEFENSE.
APPROVED BY THE PRESIDENT OF THE UNITED STATES.

(Spaces for date, full name, street, city and state addresses.)

1. Date of birth
2. Place of birth.
3. If foreign born, when did you become a resident of the United States?
4. When and where naturalized? How?
5. Are you single, married, widowed, or divorced? Nationality? Color? Height? Weight?
6. State high school, academy, college, or university you have attended, with dates of attendance, graduation, and degrees received.
7. Give all literary or scientific degrees you have received and names of institutions granting them, with dates.
8. With what languages or branches of science are you familiar?
9. When and where graduated in medicine?
10. When and where licensed to practice medicine?
11. Name principal medical societies of which you are a member. (Do not abbreviate.)
12. What specialty of medicine do you practice?
13. Proportion of time devoted to specialty?
14. Clinical experience in specialty? Institution? No. of years?
15. State all past hospital services. Hospital. Capacity. Date.
16. Present hospital connections. Hospital. Department. Capacity.
17. School and teaching positions occupied in the past. School. Capacity. Date.

18. School and teaching positions now occupied. School. Department. Capacity.
19. State all past experience in industrial or railroad medicine and surgery. NAME AND ADDRESS OF PLANT. TYPE OF SERVICE (whether medical, surgical, occupational diseases, accident work, contract practice for families of workmen, etc.) DURATION OF SERVICE.
20. State all present connections with industries or railroads. NAME AND ADDRESS OF PLANT. TYPE OF SERVICE (whether medical, surgical, occupagional diseases, accident work, contract practice for families of workmen, etc.) TIME DEVOTED TO EACH PLANT.
21. State military, naval or public health experience you have had.
22. Are you a Federal, State, County, or Municipal officer? (State exact designation of your office.)
23. Are you engaged in enterprises other than medicine? If so, what?
24. Have you followed any occupation, medical or otherwise, not already noted?
25. Have you previously been an applicant for entry into the United States Service? Service. When. Where. Result. (If rejected, state why.)
26. I have not applied for appointment in the Medical Reserve Corps of the Army, the Naval Reserve Force, or the Public Health Service owing to—(Check reason).
    a. Physical disability. (State disability in detail.)
    b. Over age (55). (State age in years.)
    c. Essential institutional need. Name of institution. Position. Name and address of chief executive.
    d. Essential community need. Approximate population. Number of physicians now practicing in your community.
    e. Essential to Health Department. Name of department. Position. Name and address of chief of department.
    f. Essential to industries. Name of plant. Position. Name and address of chief executive.
    g. Essential to medical school. Name of medical school. Position. Name and address of dean.
    h. Essential to Local or Medical Advisory Boards. Name and address of board. Position.
    i. Dependents, including self but not employees. What proportion of your income or that of your dependents is derived from sources other than the practice of your profession? Do other persons contribute to the support of your dependents? Have you or your dependents other immediate relatives who could provide support for your dependents?
    j. Sex. (State your sex.)
    k. Religious conviction, not a citizen, or other reasons. (State reason.)
27. Are you available for any of the following services:
    a. Consultant. Medical Service. Surgical Service. Public Health Service. Special Service—What?
    b. Institutional. Laboratory. Administrative. Medical Service. Surgical Service. Special Service—What?
    c. Medical service for industries. Part time. Full time. Own community. Other communities. Kind of work.
    d. Local or Medical Advisory Boards.
    e. Reclamation of registrants rejected for physical unfitness.
    f. Services to needy families and dependents of enlisted men.
    g. Sanitation.
    h. Miscellaneous service.
28. Check the Governmental service in which you would prefer to serve, if selected.
    a. Medical Reserve Corps of the Army.
    b. Naval Reserve Force.
    c. Public Health Service.

Note.—Wherever practicable, your preference will be given consideration. However, the exigencies of war may render it necessary to ask you to do service other than that indicated as your choice.

29. Personal references. (Name three, at least one physician.)

I hereby make application for membership in the Volunteer Medical Service Corps of the United States. I certify that, to the best of my knowledge and belief, the answers to the preceding questions are true and correct in every respect. I pledge myself to abide by the rules and regulations of the Corps; to apply for a commission in the Medical Reserve Corps of the Army, the Naval Reserve Force, or for appointment in the Public Health Service when called upon to do so by the Central Governing Board; and to comply with any request for service made by the Central Governing Board.

(Signature.)----------

(Present post-office address.)----------

An outline of the purpose and scope of the Volunteer Medical Service Corps, contained in the folder is as follows:

VOLUNTEER MEDICAL SERVICE CORPS ORGANIZATION:

1. Provides means for obtaining quickly men and women for any service required.
2. Furnishes recommendations and necessary credentials to assure the best of medical service both military and civil.
3. Determines beyond question the attitude of the individual toward the war.

OBJECT OF CORPS.

1. Placing on record all medical men and women in the United States.
2. Aiding Army, Navy, and Public Health Service in supplying war medical needs.
3. Providing the best civilian medical service possible.
4. Giving recognition to all who record themselves in Army, Navy, Public Health activities, or civilian service.

WORKING PLANS

All matters pertaining to the organization will be under the direction of a Central Governing Board, authorized by the Council of National Defense and approved by the President of the United States, and its affairs will be conducted from the general headquarters of the Volunteer Medical Service Corps at Washington, D. C., under the Council of National Defense.

OPERATING SYSTEM.

1. Central Governing Board of 25.
2. Forty-nine State executive committees.
3. One representative in each county in every State.

(Note).—(a) All men to be appointed to State and county committees preferably over 55.

(b) Each State executive committee to consist of five in the smaller States and one additional member in each of the larger States in proportion to each 1,000 medical inhabitants (to be nominated by State committees, Medical Section, Council of National Defense, from among their own members).

(c) Each county of 50,000 population or under should have one representative. All counties having over 50,000 population should have one additional county representative for each 50,000 population or fraction thereof. All county representatives to be nominated by the State executive committee.

DUTIES.

Central Governing Board. To receive and pass upon all appointments.

State Governing Boards. To receive facts from county representatives and make recommendations to the Central Governing Board.

County Representatives. To submit facts to State Committees according to advice from Central Governing Board or State Executive committees.

Under the reorganization, every legally qualified physician, man or woman, holding the degree of Doctor of Medicine from a legally chartered medical school, who is not now attached to the Government service, and without reference to age or physical disability, may apply for membership and be admitted if qualified; whereas, the original organization admitted only those who for various reasons were ineligible to membership in the Medical Reserve Corps. The organization will mobolize the medical profession in order to provide for the health needs of the military forces and the civil population, and the recording and classifying of doctors will afford means of obtaining quickly men and women for any service required.

To date about 40,000 of the 144,116 doctors in the United States—not including the more than 5,000 women doctors—either are in government service or have volunteered their services. Up to July 12 the Surgeon General had recommended to the Adjutant General 26,733 doctors for commissions in the Medical Reserve Corps. About 9,000 others who applied were rejected. With the 1,194 in the Medical Corps of the National Guard and 1,600 in the Navy, the total—38,527—constitutes 26.73 per cent. of the civilian doctors. Deducting those who declined their commissions or who have been discharged because of subsequent physical disability or other cause, the number actually commissioned in the Medical Reserve Corps stands (August 23) at 23,531 with several hundred recommended whose commissions are pending. Of the 23,531 there are 22,232 now on active duty.

The need of using wisely the service of the medical men, in view of the universal activities, is indicated when it is known that in the five weeks ending August 2, there were 2,700 medical officers commissioned in the Army, Navy, and Public Health Service—or at the rate of 540 per week. This rate at which enrollment is proceeding is the cumulative result of the operation of all the machinery which has been in process of setting up since the United States entered the world war. While the number commissioned in the five weeks mentioned may seem large, it is not much greater than the rate at which medical men have been receiving their commissions during the past year. There are now 28,674 medical officers commissioned in the three services—26,027 in the Army, 2,427 in the Navy, and 220 with the commission of Assistant Surgeon in the United States Public Health Service. Of the 2,700 commissioned in the five weeks ending August 2, there were 2,527 in the Army, 169 in the Navy, and 4 in the United States Public Health Service. Also, 40 doctors designated as Acting Assistant Surgeons have been taken on in the Public Health Service in the last two months, 21 for work in extra-cantonment zones, 14 for special venereal disease work, and 5 for marine hospitals. The 26,027 in the Army medical service comprise 933 in the Medical Corps, the regular Army service; 23,531 in the Medical Reserve Corps; 1,194 in the Medical Corps of the National Guard, and 369 in the Medical Corps of the National Army.

It is estimated that at least 50,000 doctors will be necessary eventually for the Army. It can readily be seen that with the enrollment of these active men, their places in communities and institutions must be cared for and the work, therefore, throughout the country must be so systematized and coordinated that the civilian population may not suffer. An important aspect is the need for medical men in the communities where munitions and other vital war products are being made.

The Volunteer Medical Service Corps, supervised by the Central Governing Board now named, will thoroughly care for these needs.

In connection with the mailing of membership blanks for the Volunteer Medical Service Corps to all legally qualified men and women doctors of the country, Dr. Franklin Martin, Chairman of the General Medical Board of the Council of National Defense, says:

"Great as has been the response to the appeal for doctors, it must be greater. It is imperative that every doctor not already in government service fill out, sign and return the blank to the offices of the Central Governing Board, Council of National Defense, Washington, at once. We believe thousands will do this, as they are anxious to be enrolled as volunteers for the Medical Departments of the Army and Navy before registration under the new draft law goes into effect. The appeal for enrollment in the Volunteer Medical Service Corps, which President Wilson has formerly approved, is an official governmental call to service. This will place the members of the medical profession of the United States on record as volunteers, available for classification and ready for service when the call comes."

COUNCIL ON PHARMACY AND CHEMISTRY.

ARTICLES ACCEPTED

Heyden Chemical Works: Silver Proteinate—Heyden.

E. R. Squibb and Sons: Chloramine-T, Squibb; Chloramine -T, Surgical Paste, Squibb; Chloramine-T, Tablets-Squibb, 4.6 grains; Dichloramine-T, Squibb.

Abbott Laboratories: Parresined Lace Mesh Surgical Dressing, Abbott; Phenylcinchoninic Acid-Abbott.

NEW AND NONOFFICIAL REMEDIES.

Silver Proteinate, Heyden. Said to be identical with protargol (See New and Nonofficial Remedies 1918, p 362). Silver proteinate-Heyden must conform with the tests, and have the properties described under protargol. The Heyden Chemical Works, New York (*Journal A. M. A.*, August 17, 1918, p 534).

Chloramine-T, Squibb. A brand of chloramine-T which complies with the New and Nonofficial Remedies standards. For a description of the action, uses, dosage, and chemical and physical properties of chloramine-T see New and Nonoffifficial Remedies 1918, p. 156. E. R. Squibb and Sons, New York.

Chloramine-T Surgical Paste-Squibb. It contains chloramine-T, 1 gm., in 100 gm. of a base composed approximately of sodium stearate, 15 per cent., and water, 85 per cent. E. R. Squibb and Sons, New Yoek.

Chloramine-T Tablets-Squibb, 4.6 grains. Each tablet contains chloramine-T, 4.6 grains. E. R. Squibb and Sons, New York.

Dichloramine-T, Squibb. A brand of dichloramine-T which complies with the New and Nonofficial Remedies standards. For a description of the action, uses, dosage, and chemical and physical properties, see New and Nonofficial Remedies 1918, p. 157. E. R. Squibb and Sons, New York (*Jour. A. M. A.*, Aug. 31, 1918, p. 745).

PROPAGANDA FOR REFORM.

The Cause of Hay-Fever. In the regions of the United States west of the Rocky Mountains, hay-fever may be produced by an almost entirely different flora from that which causes it in the eastern states and in Europe. This emphasized the need for determining the exact species involved, in each case before treatment for immunity may be undertaken. It has been found that the type of spring hay-fever which is very troublesome in the Sacramento Valley is attributable to a walnut tree pollen (*Journal A. M. A.*, August 10, 1918, p. 469.)

Eckman's Calcerbs. This is put out by the same concern that exploits Eckman's Alterative, essentially a mixture of alcohol, calcium chlorid and cloves. Calcerbs is not sold openly as a pure cure for consumption, yet as an appeal to the consumptive the claims made are probably just as alluring and as dangerous as those made in the past for the "Alterative." The A. M. A. Chemical Laboratory reports that Calcerbs is sold in the form of tablets and that these tablets contain about 20 per cent. calcium chlorid. They also contain calcium carbonate, an emodin-bearing laxative drug, such as aloes, sugar and flavoring material. That some physicians have recommended calcium salts in pulmonary tuberculosis, based on the unproved supposition that consumption is due to lime deficiency, is no excuse for a "patent medicine" concern putting out calcium chlorid under thinly veiled claims that will lead the public to infer that the preparations will cure comsunption (*Journal A. M. A.*, Aug. 10, 1918, p. 486).

Katharmon. The Council on Pharmacy and Chemistry reports that the Katharmon Chemical Company in advertising its "Katharmon" appeals especially to a profession whose members, if they live up to their ethical code, would not prescribe it. A comparison of the so-called formulas published for Katharmon in the past shows that they have not only varied from time to time but that in no instance was a quantitative statement with regard to all the ingredients given. The A. M. A. Chemical Laboratory reports that Katharmon has an alkaline reaction and therefore cannot contain boric acid, salicylic acid, or "borosalicylic acid," as has been claimed. Katharmon is in conflict with Rules 1

and 4 of the Council on Pharmacy and Chemistry because of its indefinite and secret composition and the method of advertising it indirectly to the public; it is in conflict with Rules 10, 6 and 8 in that it is an irrational shotgun mixture sold under unwarranted therapeutic claims and under a name non-descriptive of its composition (*Journal A. M. A.*, August 10, 1918, p. 487).

Mammala. This is a dried milk powder and may be considered as a partially skimmed milk dried by a patent process to which lactose (milk sugar) has been added to make up for the deficient food units caused by the partial removal of the cream. Reduced to a basis comparable with cow's milk, 12 per cent. solids, it appears that protein and ash are normal, the fat low, and the milk sugar high (*Journal A. M. A.*, August 10, 1918, p. 488).

The Toxic Effects of Arsphenamin. Recent research suggests that the toxic effects sometimes obtained from the administration of arsphenamin may be caused by the use of an insufficient amount of alkali in preparing the arsphenamin solution for injection. J. Danysz found that solutions of arsphenamin and similar preparations prepared in the usual manner, but with a small amount of calcium biphosphate added, soon precipitated on exposure to air and that these precipitates are readily soluble in sodium hydroxid. His experiments seem to show that a similar precipitation occurs when arsphenamin is injected intravenously; that this precipitation is responsible for both the mild and severe toxic reactions; and that this precipitation is the more likely to occur the smaller amount of alkali used for preparing the solution. He reports, however, that a hyperalkaline solution, though less toxic when injected into the vein of rabbits than solutions containing less alkali, caused pain and that sometimes the vein became obstructed and later atrophied. Danysz also found that the toxic action of arsphenamin solutions was increased when the solutions were injected rapidly. Danysz also advised that small initial (vaccinating) doses should be given to establish tolerance before full doses are administered (*Journal A. M. A.*, August 17, 1918, pp. 570 and 596).

Mail Order Frauds. A fraud order was issued against the following four concerns after an investigation into the character of their business by the post office authorities: Mrs. A. H. Hon, South Bend, Ind., advertising and selling various alleged remedies for the self-treatment of ailments peculiar to women. The Publishers Advertising Agency, Inc., operated by Clarence E. Worthen, Boston, Mass., for the purpose of securing space in newspapers for the advertisement of a large number of proprietary articles sold through drug-stores. L. A. Johnson, an ignorant negro, Lake Village, Ark., operating under the names of Dr. George D. Williams, Dr. L. A. Johnson, and The Associated Doctors, and offering to cure "anything you were not born with." Last Chance Medicine Co., conducted by a negro, C. Frank Jones, at Birmingham, Ala. (*Journal A. M. A.*, August 17, 1918, p. 590).

Di-Crotalin Treatment of Epilepsy. Di-crotalin is a rattlesnake venom preparation which has been advertised by the Swan-Myers Co. as a "treatment for epilepsy, chorea, bronchial asthma, chronic or hereditary nervous headache, nervous prostration incident to change of life, hysteria mania, insomnia, neurasthenia, etc." That any measure of success, sufficient to justify the adoption of the rattlesnake venom treatment for epilepsy has resulted, is not to be concluded from the available reports. Still less evidence is there for the use of rattlesnake venom in the list of conditions given by the Swan-Myers Co. There are a number of good reasons why the cautious physician will shun this treatment and advise against it (*Journal A. M. A.*, August 17, 1918, p. 592).

Let the Reader Know. In the latest issue of the American Journal of Syphilis appears an article by J. Sheridan Baketel, "On the Use of American-Made Salvarsan," which is in effect a puff for Metz's Arsphenamine. The reader is informed that Dr. Baketel is Professor of Preventive Medicine and Hygiene and Lecturer on Genito-Urinary Diseases and Syphilis in the Long Island College Hospital; Genito-Urinary Surgeon to the House of Relief of the New York Hospital; Major, Medical Reserve Corps, United States Army. The reader is not told, however, that Dr. Baketel is or was until quite recently in the employ of the A. H. Metz Laboratories (the present name of the Farbwerke-Hoechst Co.) and has for some time been the manager of the pharmaceutical department of that concern (*Journal A. M. A.*, August 24, 1918, p. 664).

A Correction. In an article "Dependability of Dosage in Tablets" (*Journal A. M. A.*, July 27, 1918) the Tailby-Nason Company was included with firms one or more products of which had been found deficient by the Connecticut Agricultural Station. In this an injustice was done the Tailby-Nason Company. The Connecticut Experiment Station has issued a statement that no product of this firm was found deficient and that the name of the firm was included through an error (*Journal A. M. A.*, August 24, 1918, p. 681).

Diplosal and Acetylsalicylic Acid. Diplosal is the salicylic ester of salicylic acid and in the intestine is broken up into salicylates. The only advantage of diplosal over sodium salicylate consists in its lesser solubility and therefore in the taste. The same advantage is possessed by acetylsalicylic acid. If diplosal is unobtainable, or its cost prohibitive, acetylsalicylic acid may be used in its stead in the same dosage (*Journal A. M. A.*, August 24, 1918, p. 682).

NEW BOOKS

Under this heading books received by the Journal will be acknowledged. Publishers are advised that this shall constitute return for such publications as they may submit. Obviously all publications sent us cannot be given space for review, but from time to time books received, of possible interest to Oklahoma physicians, will be reviewed.

MILITARY SURGERY IN THE ZONE OF THE ADVANCE.

(Medical War Manual Number 7, Authorized by the Secretary of War and Under the Supervision of the Surgeon-General and the Council of National Defense).

By George deTarnowsky, M. D., F. A. C. S., Surgeon to Cook County and Ravenswood Hospitals, Chicago; Major, M. C. U. S. R., American Expeditionary Forces, France, 1917-1918. 330 pages, illustrated, leather. Price $1.50. Lea and Febiger, Philadelphia and New York.

This manual is an intensely interesting volume The demands made upon surgeons in the present war are such that hardly any experience of civil life approximates what he is called upon to meet on and near the battle-front. Major Tarnowsky tells in detail from his rich experiences in the zone of the advance, how best to meet conditions.

MATERIA MEDICA AND THERAPEUTICS FOR NURSES.

By John Foote, M. D., Assistant Professor of Therapeutics and Materia Medica, Georgetown University School of Medicine; Instructor in Materia Medica and Therapeutics, Providence Hospital Training School for Nurses. Third Edition, Revised and Enlarged. Cloth, 310 pages. Price $1.75. J. B. Lippincott Company, Philadelphia.

This work is concise and well arranged, containing description of the uses, preparations, dosage. There are chapters on Dosage, Administration, Preparations of Solutions, etc., the action of Medicines, then a general consideration of drugs and medicines and the description.

CYSTOSCOPY AND URETHROSCOPY.

A Treatise on Cystoscopy and Urethroscopy, by Dr. George Luys, Former Interne, Hospitals of Paris; Former Assistant in the Department of Urinary Diseases of the Lariboisiere Hospital; Laureate of the Faculty of the Academy of Medicine. Translated and Edited with additions by Abr. L. Wolbarst, M. D., New York, Cystoscopist, Beth Israel Hospital; Consulting Urologist Central Islip and Manhattan State Hospitals; Genito-Urianry Surgeon, West Side German Dispensary and Hospital; Author of "Gonorrhea in the Male," etc. With 217 figures in the text and 24 chromotypographic plates out side the text, including 76 drawings from original water colors. Cloth, 386 pages. Price $7.50. St.Louis: C. V. Mosby Company, 1918.

Dr. Luys is the most renowned authority on the subject in Europe. He gives a thorough description of cystoscopy and urethroscopy, tracing their development and their uses from their very beginning up to the present day. The translation has been done and the text brought up to date by an American urologist and linguist of experience, who has added many valuable features that will appeal to American readers.

In no other book on this subject has there appeared such wonderful illustrations. The 76 color plates from original drawings in water colors were made especially for this translation in France.

PHYSIOLOGY FOR NURSES. A text Book of Physiology for Nurses, by William Gay Christian, M. D., Professor of Anatomy, Medical College of Virginia, and Charles C. Haskell, M. A., M. D., Professor of Physiology and Pharmacology, Medical College of Virginia. Cloth, illustrated, 168 pages. Price $1.75. C. V. Mosby Company, St. Louis, 1918.

SURGICAL AND WAR NURSING. Surgical and War Nursing, by A. H. Barkley, M. D. (Hon.), M. C., F. A. C. S., Lecturer at Good Samaritan Hospital Training School for Nurses; Consulting Surgeon, Good Samaritan Hospital, Lexington, Ky. Cloth, illustrated, 208 pages. Price $1.75. C. V. Mosby Company, St. Louis, 1918.

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